

I claim :

1. A roofing or siding system having an average resulting reflectivity of at least about 45% comprising an adhering surface on which a plurality of granules are at least partially secured thereto, said granules having an average reflectivity of at least about 55% and an average hardness of over about 3 Moh's.
2. The roofing and/or siding system as defined in claim 1, wherein said granules have an average reflectivity of about 55-99.9%, said roofing or siding system having an average resulting reflectivity of about 45-95%.
3. The roofing and/or siding system as defined in claim 2, wherein said granules have an average reflectivity of about 60-99.9%, said roofing or siding system having an average resulting reflectivity of about 50-95%.
4. The roofing and/or siding system as defined in claim 1, wherein said granules have an average hardness of at least about 4 Moh's.
5. The roofing and/or siding system as defined in claim 3, wherein said granules have an average hardness of at least about 4 Moh's.
6. The roofing and/or siding system as defined in claim 3, wherein said granules have an average opacity of at least about 55%.
7. The roofing and/or siding system as defined in claim 6, wherein said granules have an average opacity of at least about 60%.
8. The roofing and/or siding system as defined in claim 5, wherein said granules have an average opacity of at least about 60%.

9. The roofing and/or siding system as defined in claim 1, wherein said granules have an average porosity of less than about 20%.

10. The roofing and/or siding system as defined in claim 9, wherein said granules have an average porosity of about 0-15%.

11. The roofing and/or siding system as defined in claim 8, wherein said granules have an average porosity of about 0-15%.

12. The roofing and/or siding system as defined in claim 1, wherein at least a plurality of said granules include aluminum.

13. The roofing and/or siding system as defined in claim 12, wherein at least a plurality of said granules include a majority of aluminum.

14. The roofing and/or siding system as defined in claim 11, wherein at least a plurality of said granules include a majority of aluminum.

15. The roofing and/or siding system as defined in claim 1, wherein at least two particle size distributions of granules are at least partially embedded in said adhering surface.

16. The roofing and/or siding system as defined in claim 14, wherein at least two particle size distributions of granules are at least partially embedded in said adhering surface.

17. The roofing and/or siding system as defined in claim 1, wherein said granules cover over about 95% of said adhering surface.

18. The roofing and/or siding system as defined in claim 17, wherein said granules cover over about 98% of said adhering surface.

19. The roofing and/or siding system as defined in claim 16, wherein said granules cover over 98% of said adhering surface.

20. The roofing and/or siding system as defined in claim 1, wherein said adhering surface includes an asphalt and/or bitumen surface, a plurality of said granules being at least partially embedded in said asphalt and/or bitumen surface.

21. The roofing and/or siding system as defined in claim 19, wherein said adhering surface includes an asphalt and/or bitumen surface, a plurality of said granules being at least partially embedded in said asphalt and/or bitumen surface.

22. The roofing and/or siding system as defined in claim 1, wherein said adhering surface includes a foam surface, a plurality of said granules being at least partially embedded in said foam surface.

23. The roofing and/or siding system as defined in claim 19, wherein said adhering surface includes a foam surface, a plurality of said granules being at least partially embedded in said foam surface.

24. The roofing and/or siding system as defined in claim 1, wherein said adhering surface includes an adhesive surface.

25. The roofing and/or siding system as defined in claim 19, wherein said adhering surface includes an adhesive surface.

26. A highly reflective granule for use on a roofing and/or siding system to at least partially coat and provide a highly reflective, weather resistant surface coating on the roofing and/or siding system, said granule having a reflectivity of at least about 55%, a hardness of over about 3 Moh's, a porosity of less than about 20%, an opacity of at least about 55%, and an aluminum content of at least about 10 weight percent.

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27. The highly reflective granule as defined in claim 26, wherein said reflectivity is about 60-99%.

28. The highly reflective granule as defined in claim 26, wherein said hardness is at least about 4 Moh's.

29. The highly reflective granule as defined in claim 27, wherein said hardness is at least about 4 Moh's.

30. The highly reflective granule as defined in claim 26, wherein said opacity is at least about 60%.

31. The highly reflective granule as defined in claim 29, wherein said opacity is at least about 60%.

32. The highly reflective granule as defined in claim 26, wherein said porosity is about 0-15%.

33. The highly reflective granule as defined in claim 31, wherein said porosity is about 0-15%.

34. The highly reflective granule as defined in claim 26, including a majority of aluminum.

35. The highly reflective granule as defined in claim 33, including a majority of aluminum.

36. The highly reflective granule as defined in claim 26, including silicon, and a ratio of said aluminum content to said silicon content is about 1.1-100000:1.

37. The highly reflective granule as defined in claim 36, including silicon, and a ratio of said aluminum content to said silicon content is about 2-50000:1.

38. The highly reflective granule as defined in claim 35, including silicon, and a ratio of said aluminum content to said silicon content is about 2-50000:1.

39. The highly reflective granule as defined in claim 26, wherein said surface includes an asphalt and/or bitumen surface.

40. The highly reflective granule as defined in claim 38, wherein said surface includes an asphalt and/or bitumen surface.

41. The highly reflective granule as defined in claim 26, wherein said surface includes a foam surface.

42. The highly reflective granule as defined in claim 38, wherein said surface includes a foam surface.

43. The highly reflective granule as defined in claim 26, wherein said surface includes an adhesive surface.

44. The highly reflective granule as defined in claim 38, wherein said surface includes an adhesive surface.

45. A method of coating highly reflective granules on an adhering surface of roofing or siding to obtain an average resulting reflectivity of at least about 45% comprising:

a) selecting a plurality of highly reflective granules having an average reflectivity of at least about 55% and an average hardness of over about 3 Moh's; and,

5 b) applying said granules substantially uniformly on said adhering surface until over about 95% of said adhering surface is covered by said granules.

46. The method as defined in claim 45, including the use of at least two different sized of granules, a first size of granules having an average particle size that is greater than an average particle size of a second size of granules, said first size of granules being applied to said adhering surface prior to said second size of said granules.

47. The method as defined in claim 45, wherein a size ratio of said first size of granules having an average particle size to an average particle size of a second size of granules is at least about 1.3:1.

48. The method as defined in claim 45, wherein said adhering surface includes asphalt and/or bitumen, said adhering surface being continuously moved as said granules are applied to said adhering surface.

48. The method as defined in claim 47, wherein said adhering surface includes asphalt and/or bitumen, said adhering surface being continuously moved as said granules are applied to said adhering surface.

49. The method as defined in claim 45, wherein said granules cover over about 98% of said adhering surface.

50. The method as defined in claim 48, wherein said granules cover over about 98% of said adhering surface.

51. A roof system comprising a roof substrate at least partially coated with granules to obtain an average resulting reflectivity of at least about 45%, said granules having an average reflectivity of at least about 55% and an average hardness of over about 3 Moh's, said granules covering over about 95% of said roof substrate.

52. The roof system as defined in claim 51, including the use of at least two different sized of granules, a first size of granules having an average particle size that is greater than an average particle size of a second size of granules.

53. The roof system as defined in claim 52, wherein a size ratio of said first size of granules having an average particle size to an average particle size of a second size of granules is at least about 1.3:1.

54. The roof system as defined in claim 51, wherein said granules cover over about 98% of said adhering surface.

55. The roof system as defined in claim 53, wherein said granules cover over about 98% of said adhering surface.